

OKC - 2973
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22 January 1962

MEMORANDUM FOR THE RECORD

SUBJECT : Trip Report, West Coast, 15-18 January 1962,
by [REDACTED]

1. The purpose of this trip was to attend the Lockheed conducted initial OKCART ground school. Discussions were also held with [REDACTED] Comments are contained in the following paragraphs on these subjects:

- a. The ground school.
- b. Initial flight test planning.
- c. Maintenance of records and progress reporting.
- d. Runway barrier.
- e. Simulator
- f. Communications and attitude gyro.

2. Ground School. The school was held in a room in [REDACTED] area, with instructional lectures given by the design engineers responsible for the various systems covered. This approach made the course highly gratifying to me and, in my opinion, an excellent one. The concepts of design of the aircraft and sub-systems are well thought out, are in accord with the best engineering practices and represent many advances in the state of the art. There will be some changes required as a result of flight test, but these should be relatively minor. One example of minor design corrections which should be taken, as brought out in the school, is in the hydraulic system. The present system as described does not provide for both engine inlet spikes to be operated by either of the main (L and R) systems. A failure of one system would therefore have a strong effect on performance. Since this was brought to their attention no further action is proposed at this time. Another item of interest brought up in the school was single engine performance. This has been contained in no previous reports. The cruise Mach number can be maintained by decreasing altitude and weight and exceeding the limit speed of 450 knots EAS. This is not considered impractical; however, rigorous preplanning will be essential to determine amount of fuel to dump and new destination for flights over

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unfriendly territory. The only engine-out range data shown was for 36,000 feet and .8 Mach number. This subject will require more definition through testing. One question, "What speed can be attained during takeoff roll, takeoff discontinued, and aircraft stopped on runway, for various weights, etc?", went unanswered except for "pretty low."

3. Initial Flight Test Planning. [] said that the plans for the first flight were the only firm plans at this time and would be essentially as follows: TOGW - 80,000 pounds; forward cg during entire flight; gear down during entire flight; 40,000 feet and .9 Mach number, maximum; maneuvers at various altitudes. This is considered very appropriate.

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4. Maintenance Of Records And Progress Reporting. Thorough records will be maintained by Lockheed according to []. Progress reports will consist of monthly reports plus daily reports on items of interest. Whether these reports will provide a basis whereby this Headquarters can keep abreast of progress on all items of interest on a current basis will depend on content of the reports.

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5. Runway Barrier. Current Lockheed plans are to construct two chain barriers, one on the overrun [].

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[] The proposed engaging device is a simple one, a cable supported on boxes (?) with the cable depressed for a short distance for nose gear passage. This will require accurate positioning of the aircraft so that the nose wheel will go through the slot and the main gear engage. My comment here is that the system is simple and cheap, but of questionable usefulness (due to location) and adequacy (unless all directional control systems are operating and tires do not blow). Comments contained in my previous memorandums on this subject are still considered fully valid.

6. Simulator. Lockheed comments on this item are to the effect that their proposal provides a simplified approach which can result in an economical training aid. I do not disagree with this; however, further study is required and comments will be made in the near future.

7. Communications And Attitude Gyro. A brief discussion with [] indicated that proposed communications equipment changes (ABC-50, VOR, SSR) were being considered for number four vehicle. The

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addition of the INS stable platform display through the attitude gyro is still not being actively considered. This item was discussed previously but not pushed. It would appear profitable to add this capability to (1) provide an alternate system for the instrument, and (2) provide a check on the INS immediately prior to engagement to the autopilot. It was agreed locally that this should be considered a follow-on item since it is desirable rather than essential. If installation in number four vehicle is considered appropriate, a message should be sent to Lockheed confirming this.

2. Summary Of Action Required.

- a. Simulator investigation and report, by Development Branch.
- b. Message to Lockheed re INS presentation if desired, by Development Branch.
- c. Include funds in 1963 Budget for runway extension, by Development Branch.

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